Washington Closure Hanford

U.S. Department of Energy
Richland Operations Office

DOE's Largest Environmental Cleanup Closure Project

The ERDF Performance Assessment (PA) Progress Briefing

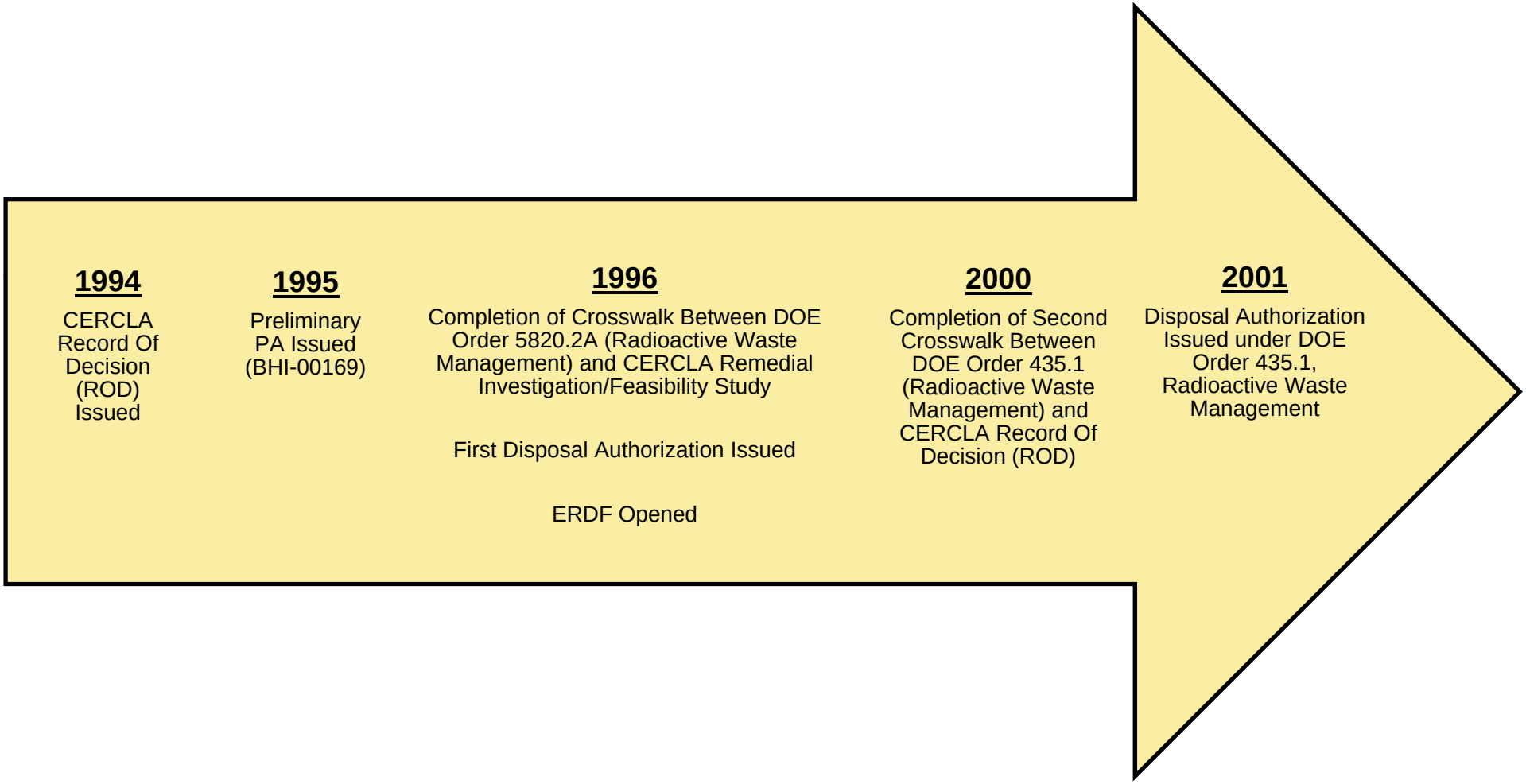
Hanford Advisory Board
River and Plateau Committee Meeting

May 8, 2012

ERDF – Layout


Cell 10
Cell 9
Cell 8
Cell 7
Cell 6
Cell 5
Cell 4
Cell 3
Cell 2
Cell 1
ERDF August 2010 (view from the north)

ERDF PA – History



ERDF PA – Purpose of Update

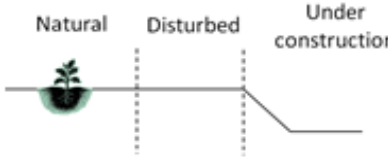
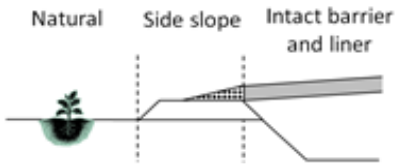
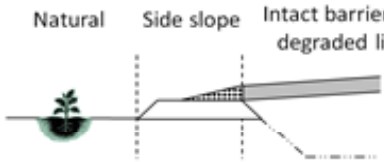
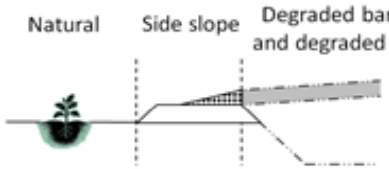
- The ERDF ROD Amendment authorizing super cells 9 & 10 (August 2009, Section VIII) requires the preparation of a PA prior to expansion of ERDF beyond cells 9 & 10
- New information (e.g., geology, hydrology, cap performance, waste characteristics) is available to update the facility performance to optimize the capability of ERDF
- Reaffirm that ERDF continues to meet long-term performance objectives provided in DOE Order 435.1, Radioactive Waste Management into the future
- Utilize DOE Order 435.1 annual maintenance requirements to address potential future waste streams
- The Hanford Advisory Board has recommended completion of a PA analysis to support ongoing ERDF disposal activities (HAB advice # 219)

ERDF PA - Modeling Approach

- Types of analyses include contaminant migration pathways (groundwater and atmospheric) and exposure scenarios (dose)
  - Groundwater pathway (estimating groundwater contamination at near-field locations over time)
  - Atmospheric releases pathway
  - Exposure scenarios
- The modeling approach incorporates methodology adapted from the Draft Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS)

Engineered System Conceptualization

- 4 Time periods
- Spatially variable recharge rates
- Temporally variable recharge rates
  - Uncertainty distributions

Phase	Conceptual Half Cross Section of the ERDF Area
Pre-operations	 **Before 1996**
Operations	 **1996 - 2035**
Early Post Closure	 **2035 - 2135**
	 **2135 - 2535**
Late Post Closure	 **After 2535**

ERDF PA - Preliminary Results

- Groundwater Pathway Modeling
  - No contaminant breakthrough at the 100 meter downgradient point of compliance in groundwater occurs within the 1,000 year compliance time period
  - Contaminants with distribution coefficient (Kd) greater than 1 ml/g do not breakthrough in groundwater at the 100 meter downgradient point of compliance within the 10,000 year sensitivity and uncertainty evaluation time period
- Atmospheric Releases Pathway
  - Negligibly small airborne Radon flux (reduces with time)

ERDF PA - Schedule

- Prepare Draft ERDF PA document
- DOE Low-Level Waste Disposal Facility Federal Review Group (LFRG) review
  - Dec. 2012 – May 2013
- Finalize ERDF PA document Sep. 2013